

FAS – Office of Global Analysis (OGA)
United States Department of Agriculture (USDA)
International Operational Agriculture Monitoring Program



May Summary Report

May 29th, 2009

1. The outlook for MY 2009/10 winter grain production (wheat and barley) in Iraq is only marginally better than last year's severely drought-affected crop. Less than adequate rainfall and/or irrigation supply during the current winter season has resulted in similarly poor or worse vegetative crop conditions than last year over large regional areas, particularly in the northern rainfed provinces of Ninawa, At Ta'min and Arbil, in addition to the southern irrigated provinces of Diyala, and portions of Wasit and Al Qadisiyah. It appears that total irrigated grain area will decline in MY2009/10 and that poor yields relative to last year in some of the highest yielding irrigated crop areas will prevent a recovery in national winter grain production. Though winter grain production prospects are improved in some northern rainfed growing provinces this year, major producers such as Ninawa, Arbil, and At Ta'min show little change from last year. It is anticipated that the production shortfalls in the south will be greater in size than the increases expected from areas that have exhibited improvement in the north. Generally poor current crop conditions are expected to result in well below-normal national grain production for the second consecutive year.
2. Cumulative precipitation for MY 2009/10 was slightly higher than the severe MY 2008/09 drought year (Figure 1), but remained well below normal throughout most of the country (Figure 2). The majority of rainfed cropland areas in northern Iraq experienced well below normal precipitation throughout the season, with long periods of dryness between significant rain events. Farmers in Ninawa reportedly delayed planting waiting for early season precipitation that never arrived. The current month of April provided improved rainfall, but all too late as harvest typically commences in early April.
3. NDVI (Normalized Difference Vegetation Index) change analysis showed that MY 2009/10 vegetative crop conditions of Iraq's major grain producing regions remained similar to worse than the severely drought affected crop season of MY 2008/09 (Figure 3). Furthermore, NDVI change from the 5-year average* revealed the most extreme departure from normal crop conditions (Figure 4). Large production regions such as the rainfed cropland provinces of Ninawa, Arbil, and At Ta'min showed significant losses in a majority of cropland with minor areas of recovery isolated to the higher elevations where seasonal rainfall was sufficient, or in close proximity to an adequate water supply. The only region to fully recover from the previous drought year with above average conditions is the northern rainfed province of As Sulaymaniyah.

The worsening conditions were particularly unexpected in the primarily irrigated southern provinces where grain production is usually much more stable. But reports from Iraq indicated that there was a significant irrigation supply shortfall this year along the Tigris River, owing to substantially reduced water flow from Turkey. Portions of Wasit and Al Qadisiyah, and large field areas in the province of Diyala showed signs of poor vegetative crop growth in comparison to the previous year and the

* In order to compare current data with normal conditions, MY 2008/09 data were excluded from the 5-year average.

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5-year average. The northwestern portions of Wasit and Al Qadisiyah did reveal areas of recovery, but the field areas were not large enough to offset the prospected deficit.

Temporal comparisons of NDVI time-series images indicated that there is much less crop vigor and abundance than the previous benchmark year of MY 2006/07, when Iraq produced a normal sized wheat crop of 2.5 million tons (Figures 5&6).

4. High resolution imagery collected throughout Iraq provided details on change in crop conditions during the MY 2009/10 crop season (Figure 7). Quickbird imagery over Ninawa revealed slight recovery in the most northern portions of the governorate at higher elevations, but a majority of cropland showed near total crop loss (Figures 8-10). The remaining AOIs indicated that most regions are experiencing crop maturation and harvest by the month of May (Figures 11-14).

Cumulative Precipitation Comparison: October to April

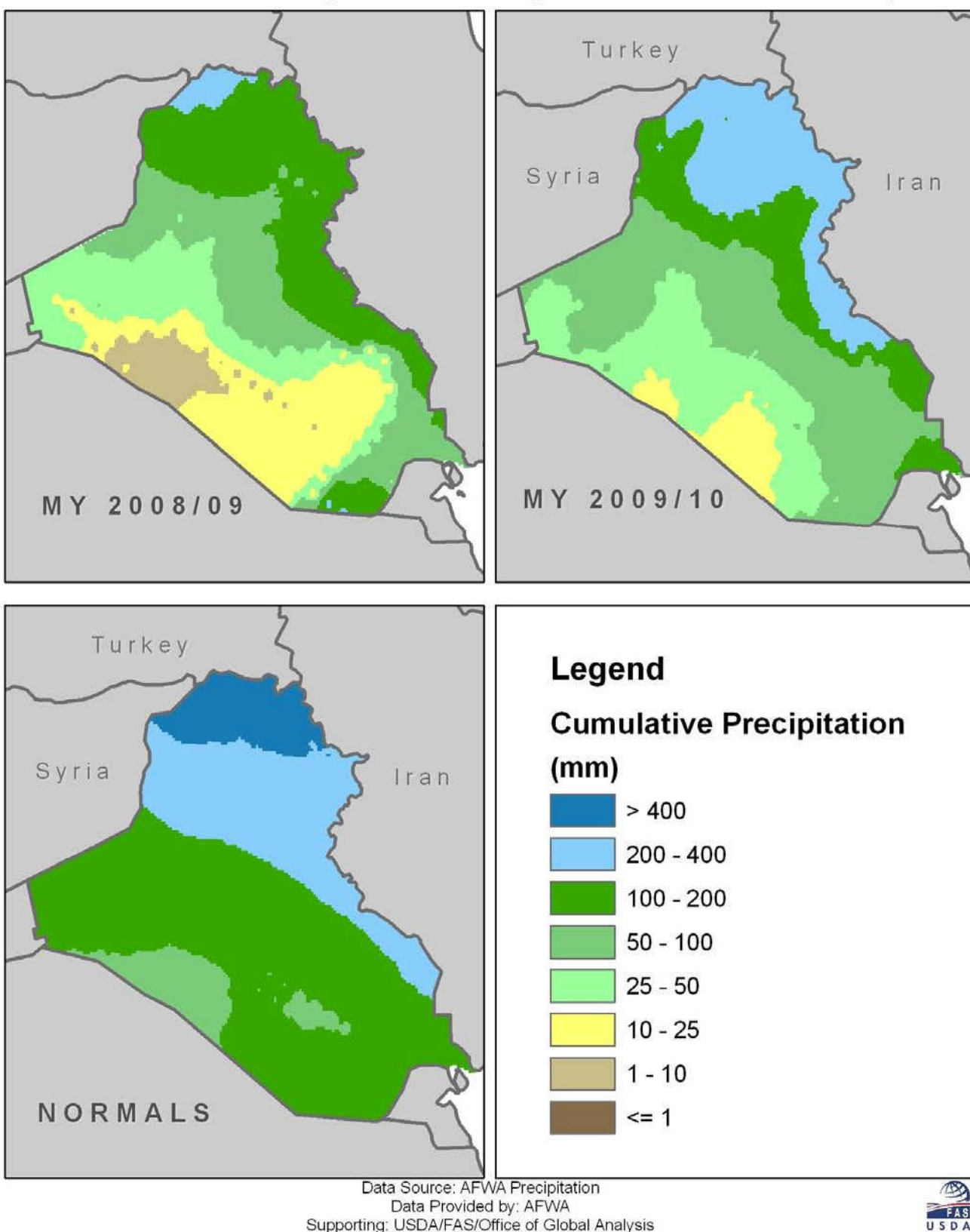


Figure 1: Cumulative precipitation comparison: MY 2009/10 vs. MY 2008/09 and Normal.

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Monthly and Season-to-Date Cumulative Precipitation: MY 2009/10

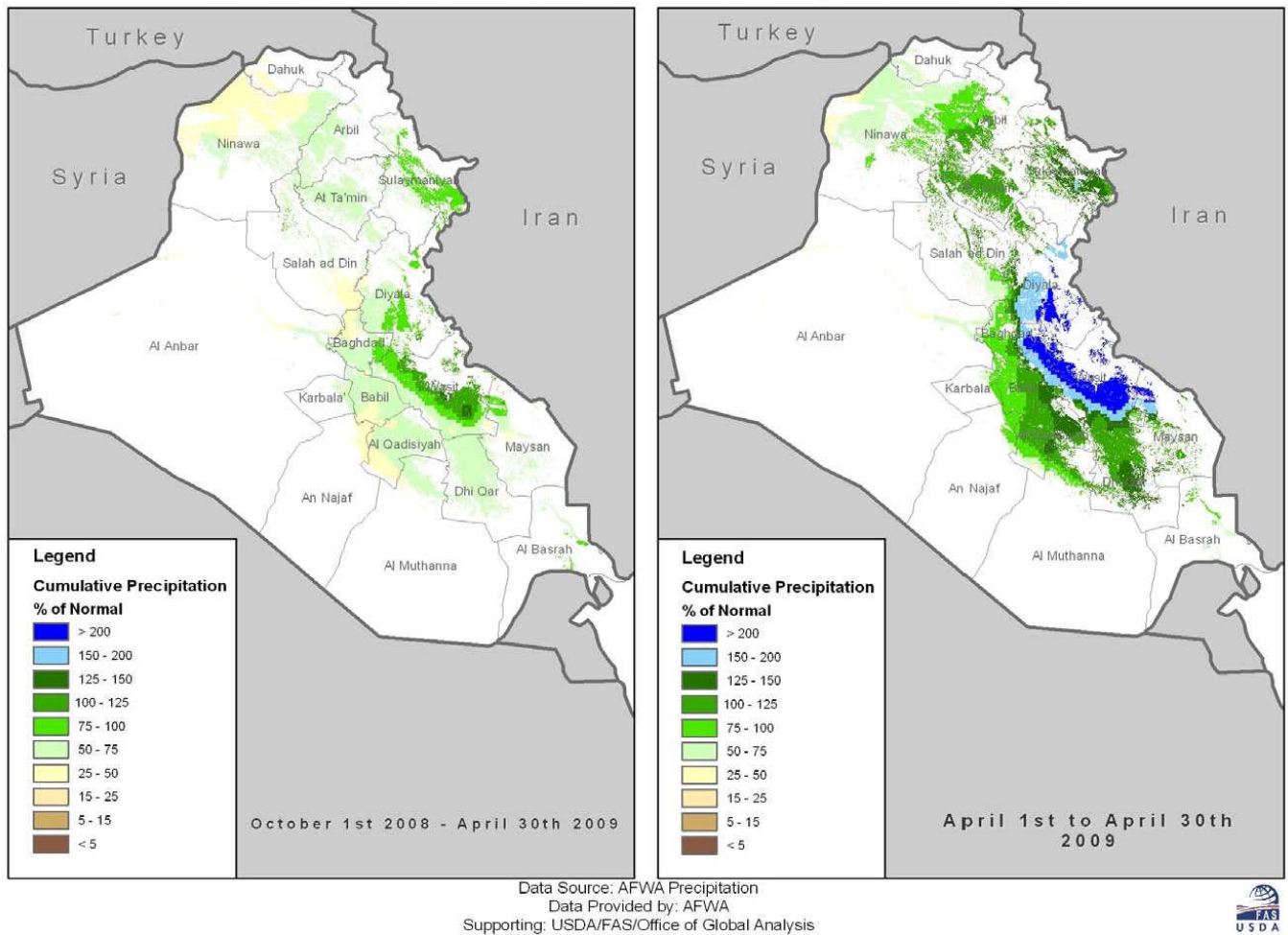


Figure 2: Percent of normal monthly and season-to-date precipitation.

MODIS NDVI Change: MY 2009/10 vs MY 2008/09

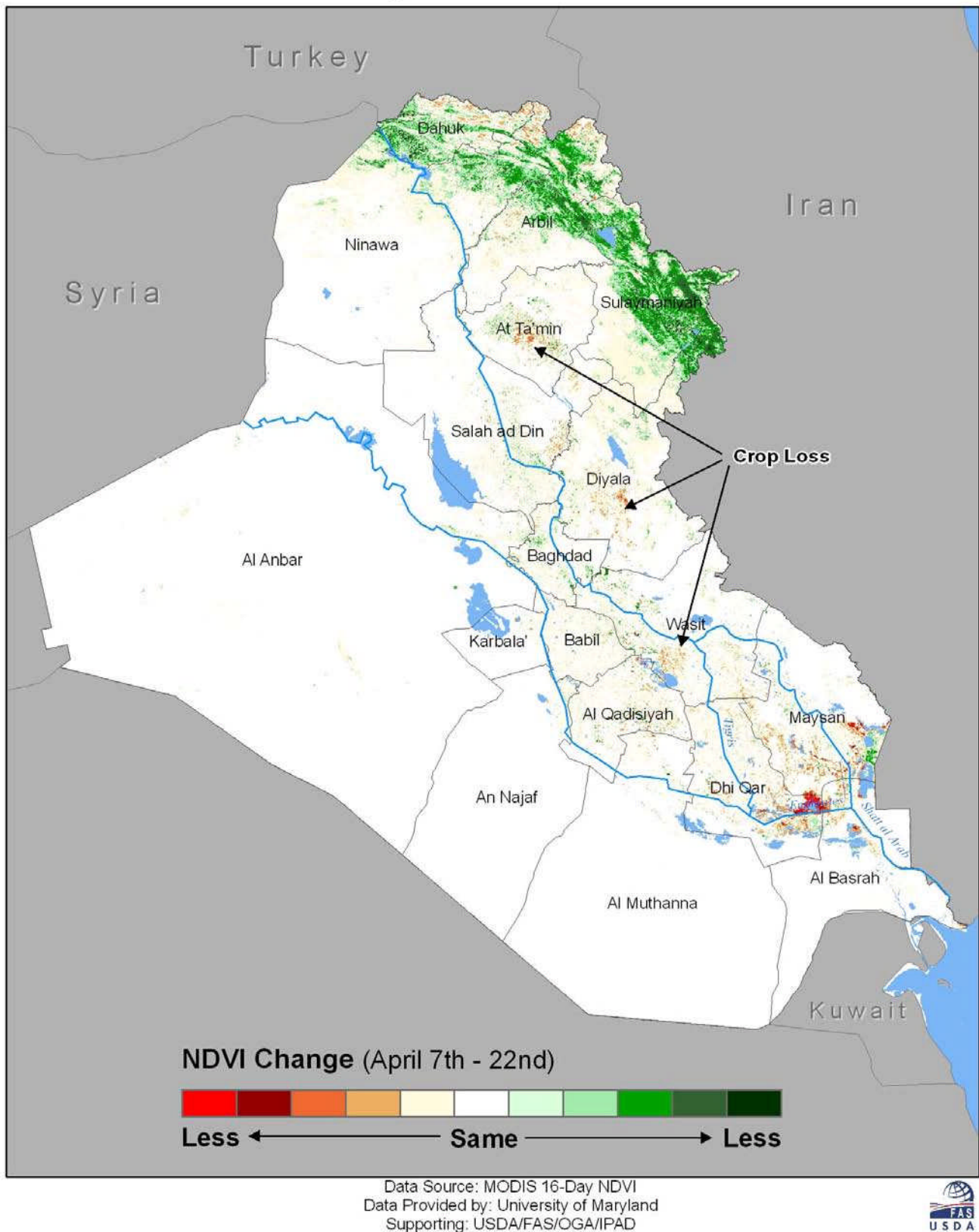


Figure 3: Change in MODIS NDVI: MY 2009/10 vs. MY 2008/09 drought year.

MODIS NDVI Change: MY 2009/10 vs 5-year Average*

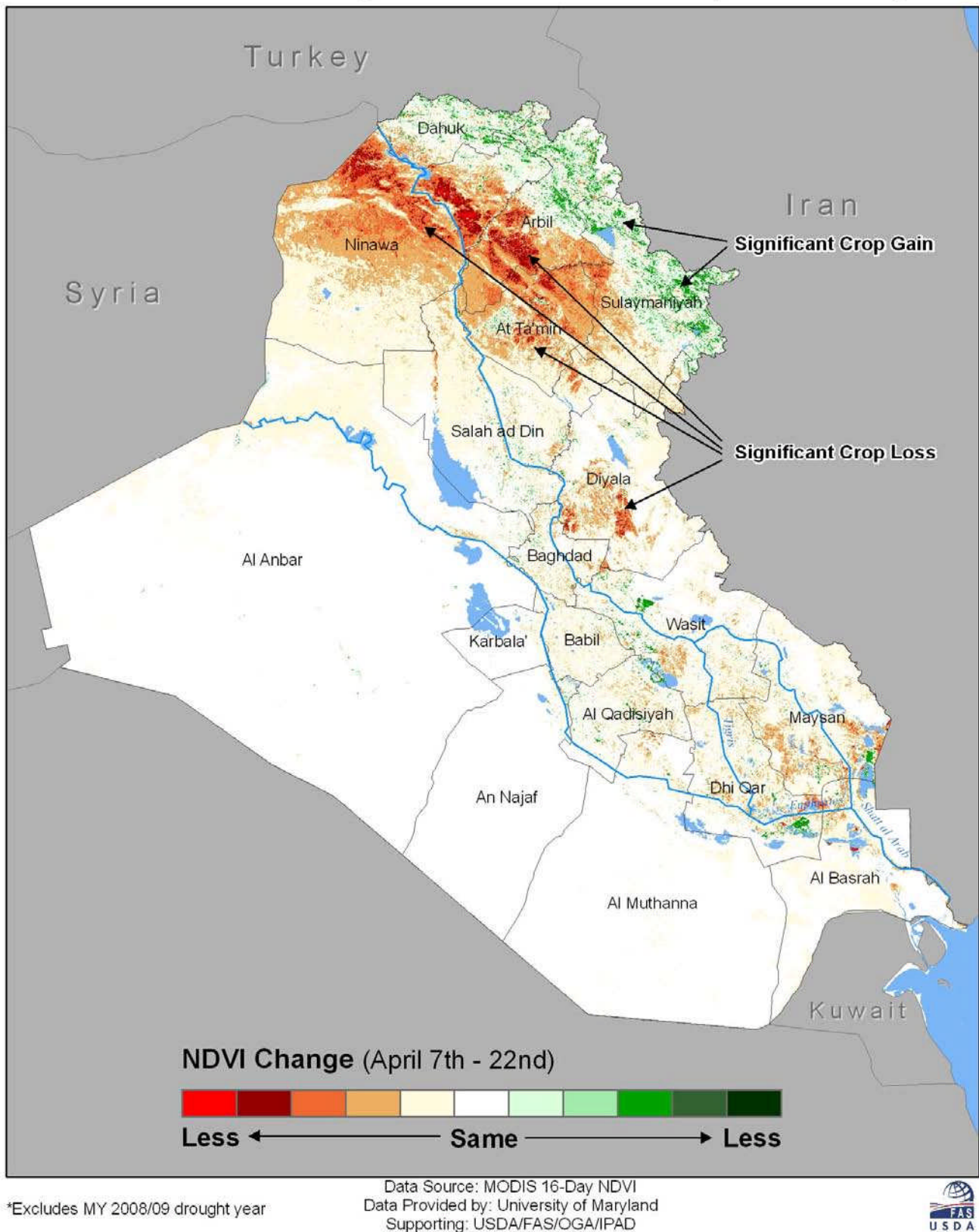
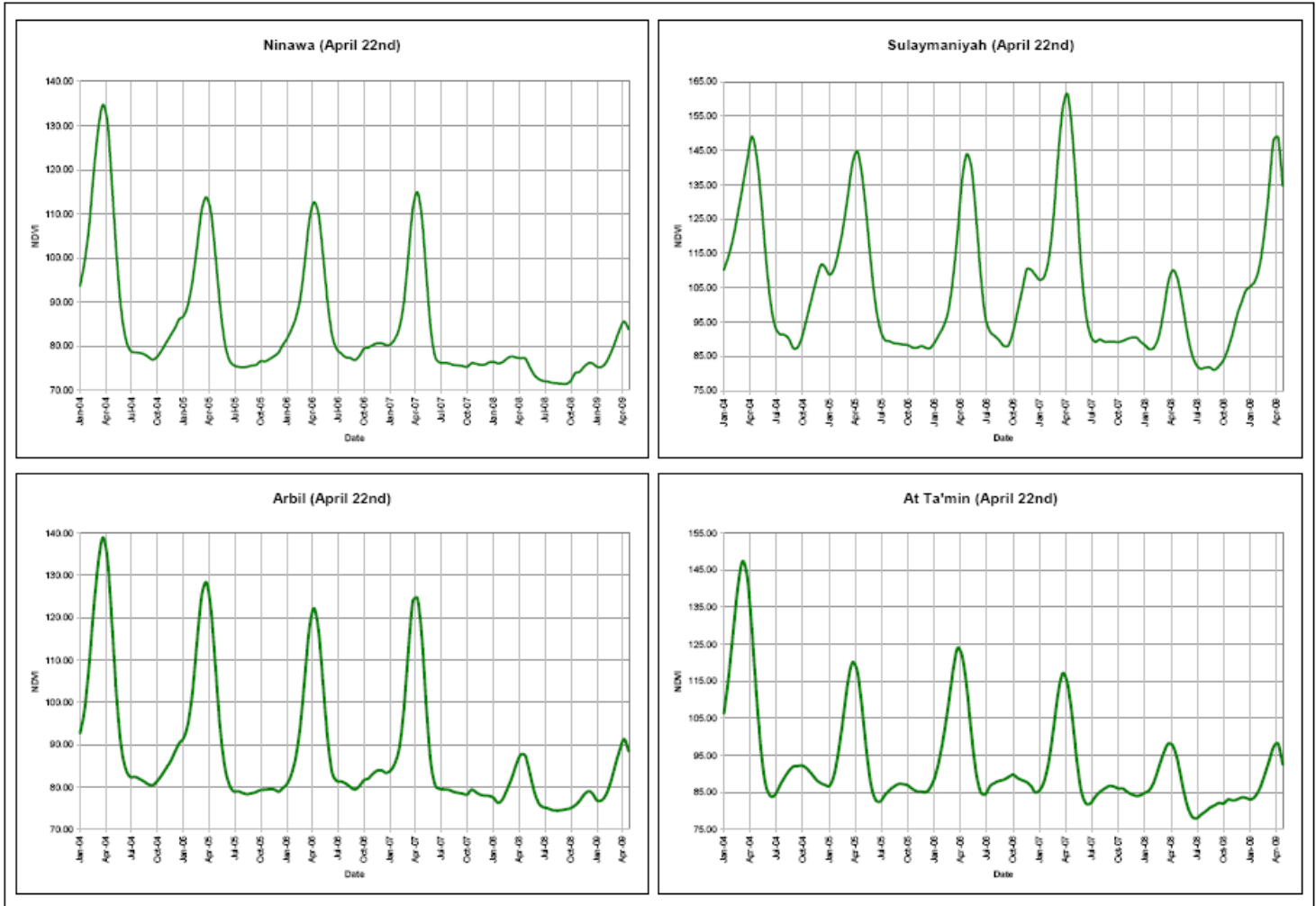
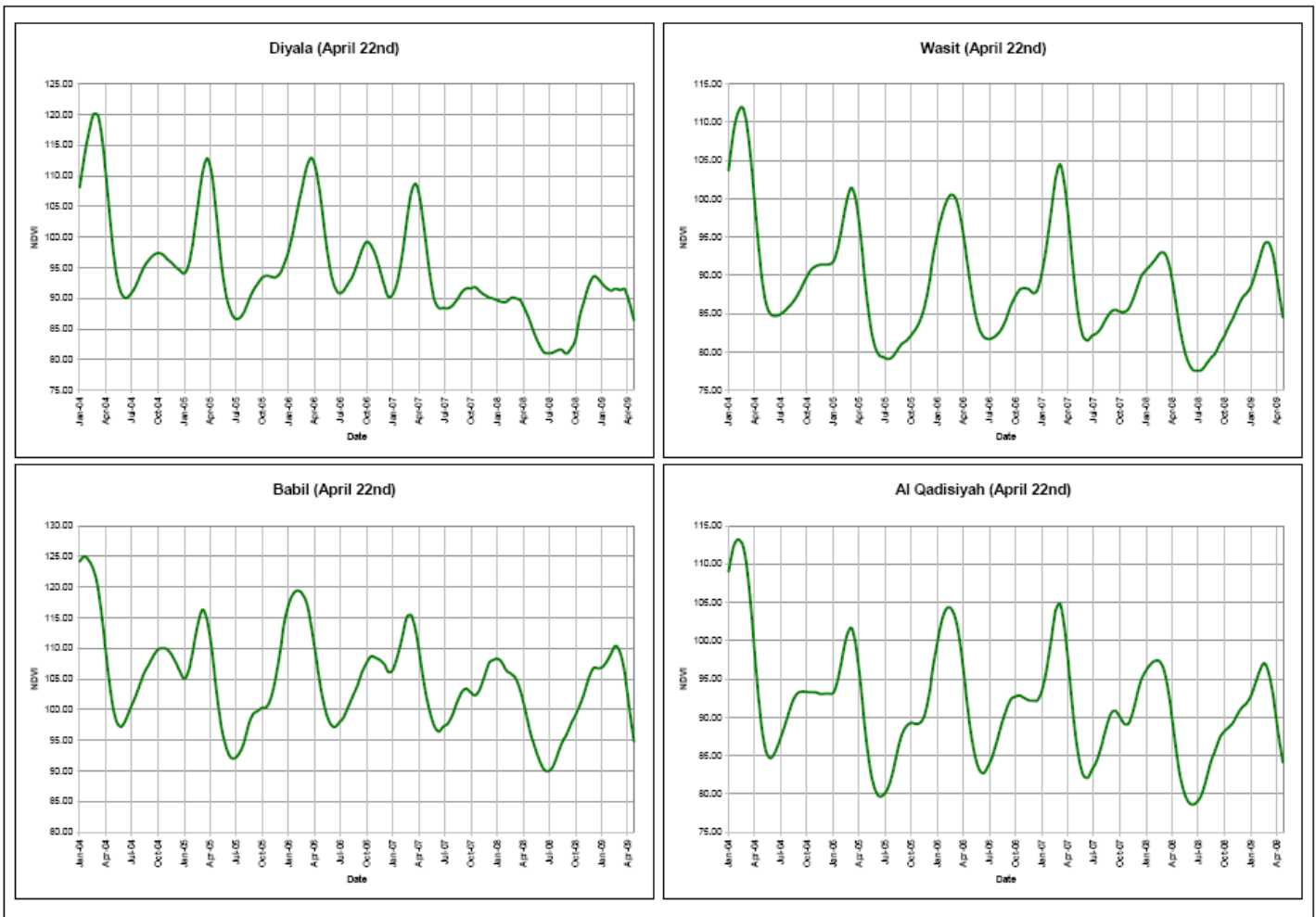


Figure 4: Change in MODIS NDVI: MY 2009/10 vs. 5-year average.

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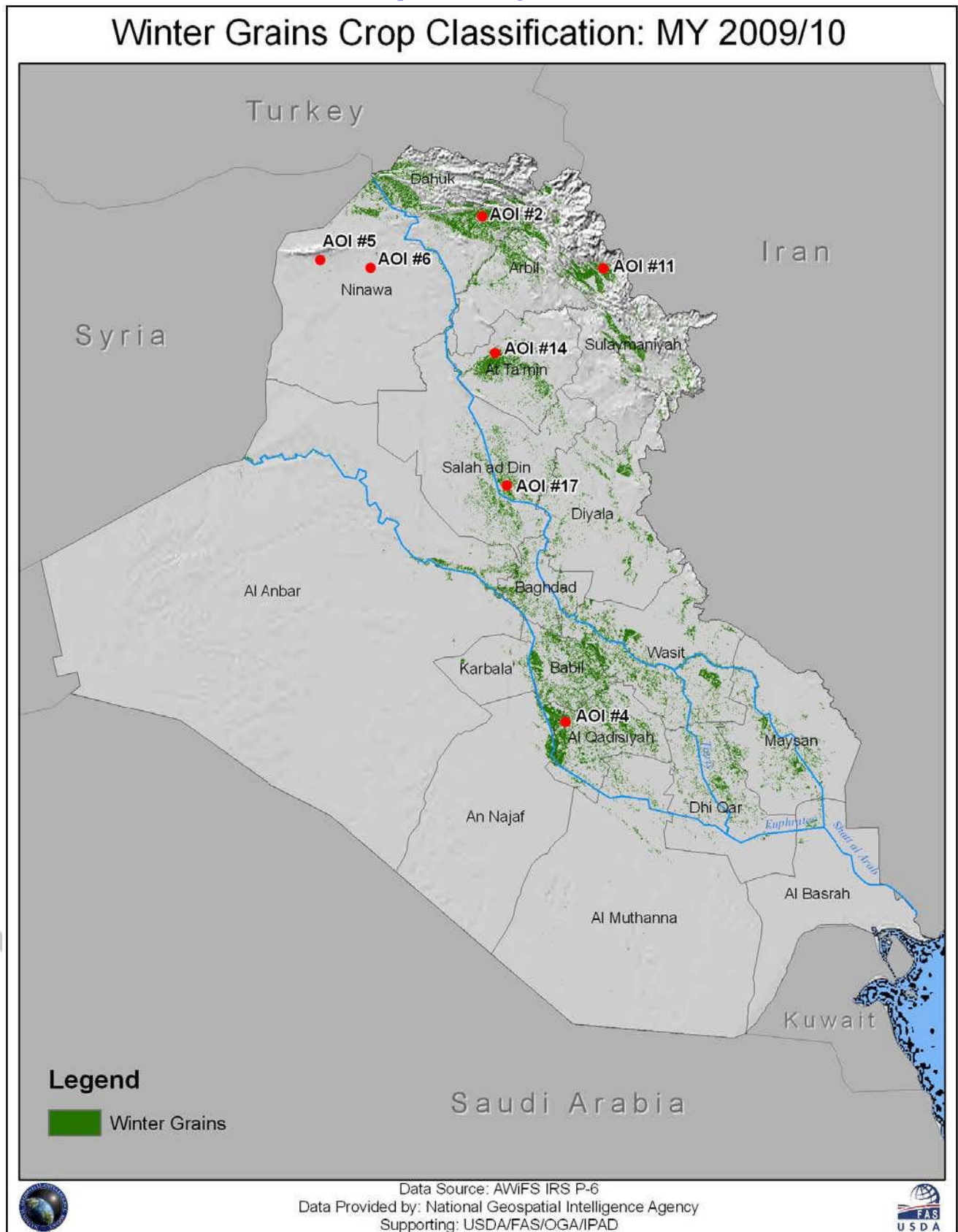


Figure 7: Winter grains map classified from AWiFS imagery. AOIs of high resolution Quickbird imagery.

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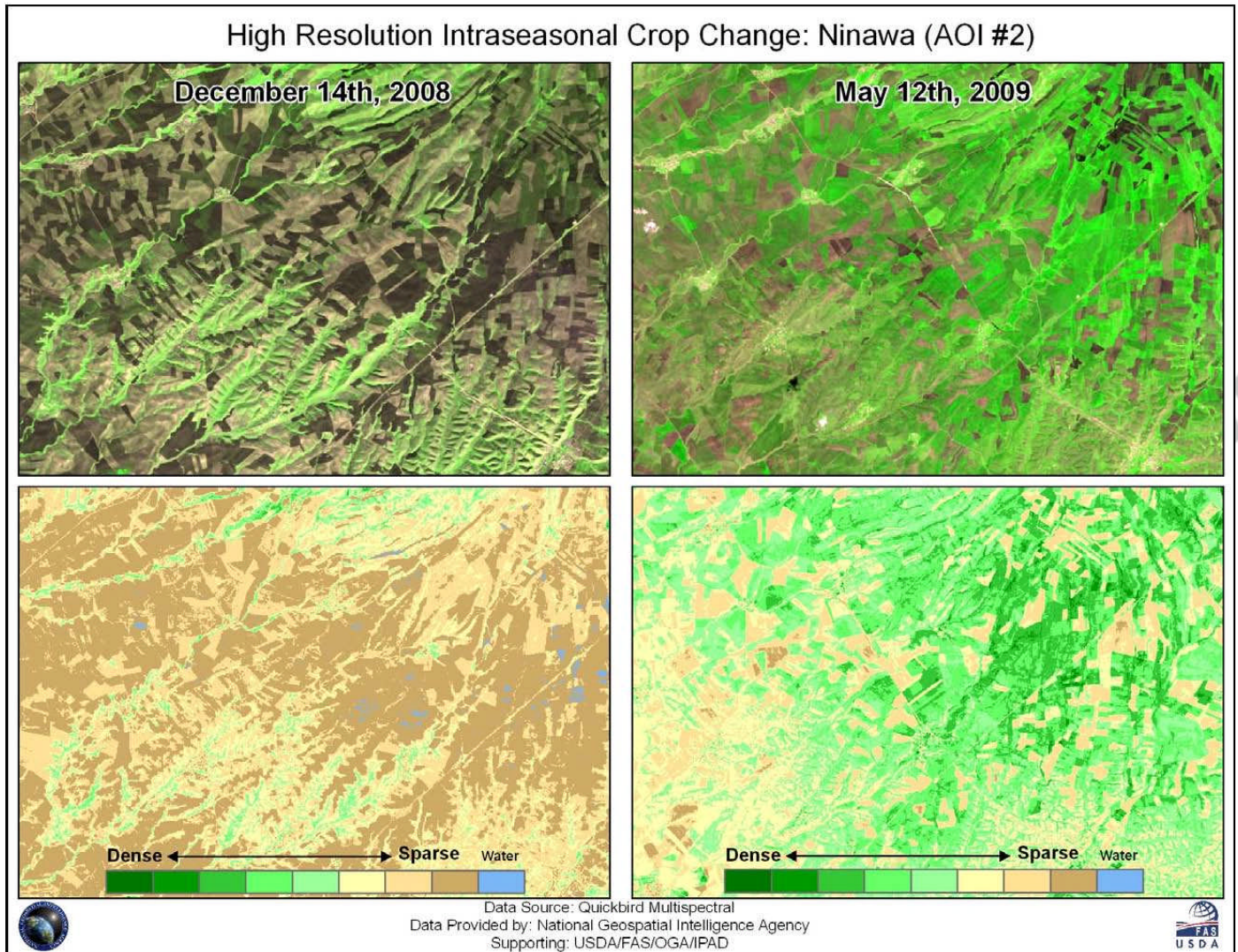


Figure 8: Quickbird imagery revealing slight crop recovery in most northern portion of Ninawa province.

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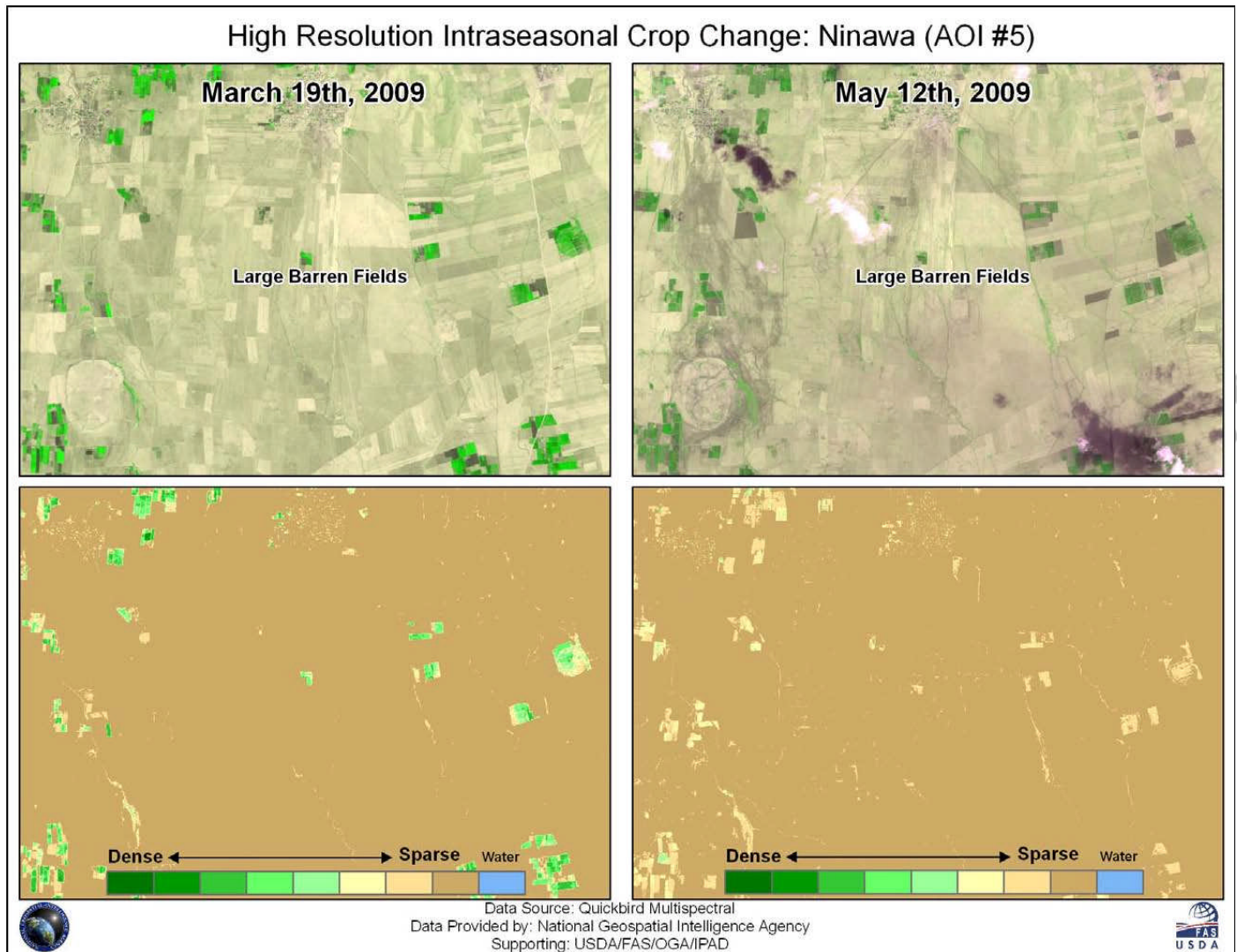


Figure 9: Quickbird imagery revealing large barren fields in Ninawa province.

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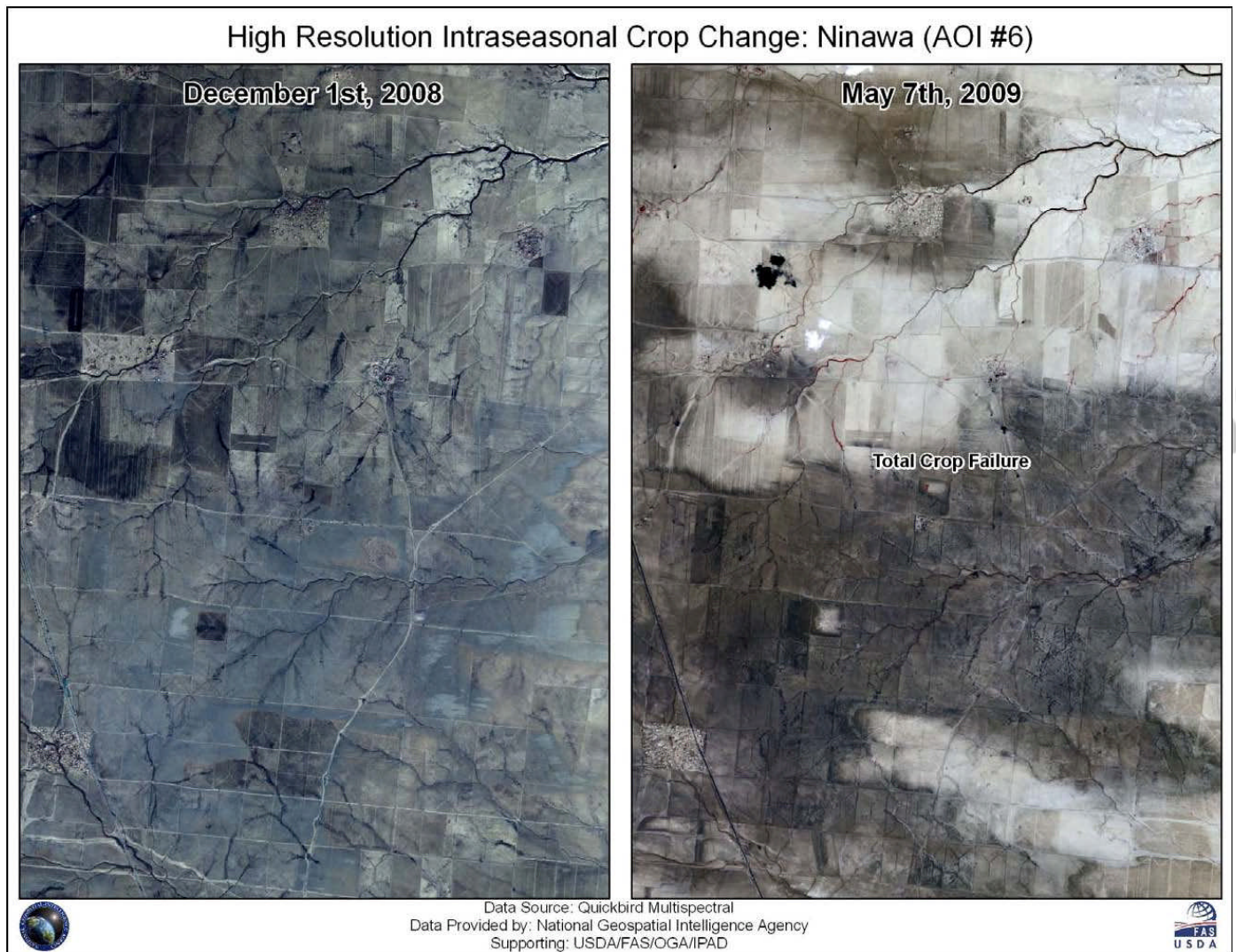


Figure 10: Quickbird imagery revealing total crop loss in Ninawa province.

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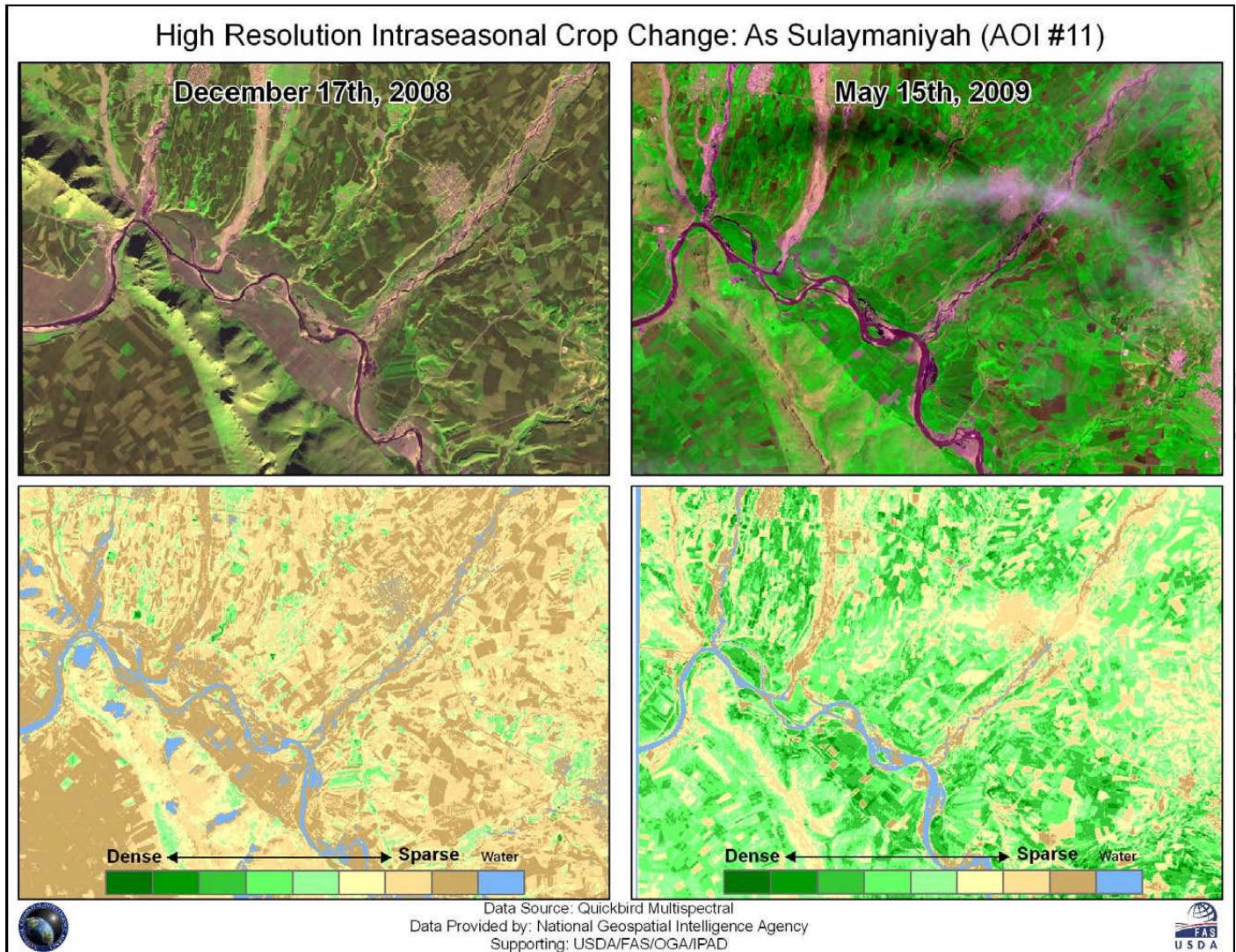


Figure 11: Quickbird imagery revealing crop recovery in As Sulaymaniyah province.

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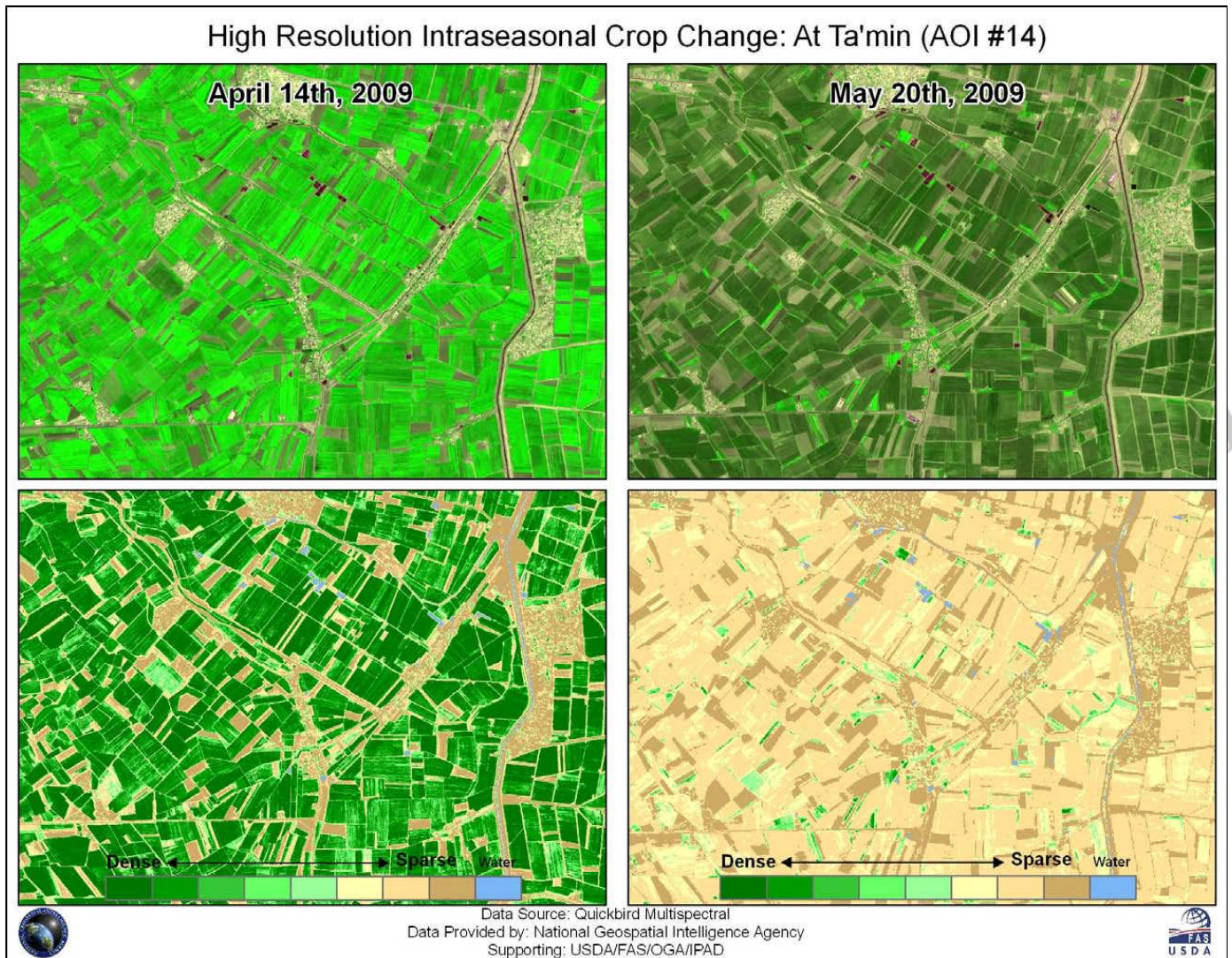


Figure 12: Quickbird imagery revealing crop maturation in At Ta'min province.

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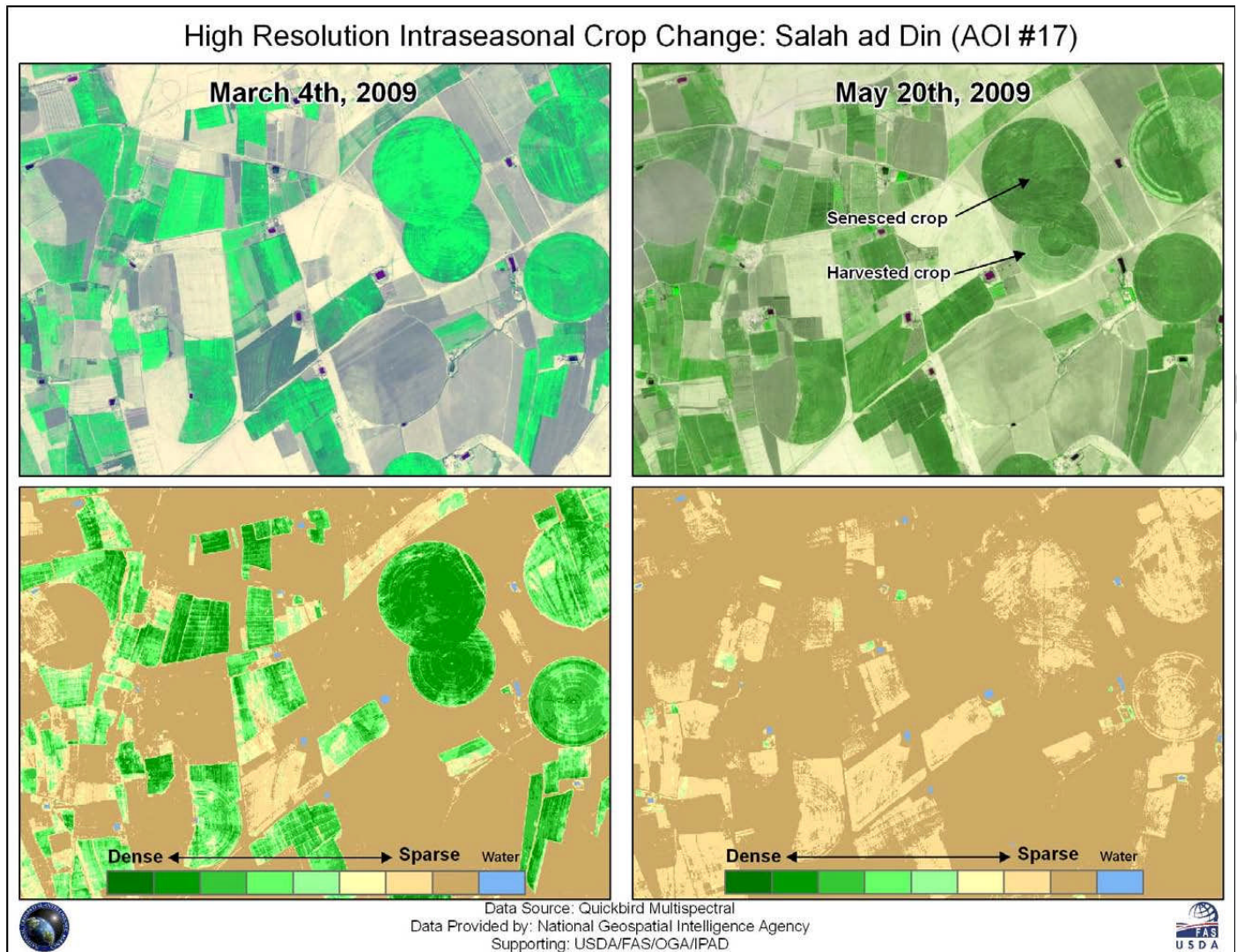


Figure 13: Quickbird imagery revealing crop maturation and harvest in Salah ad Din province.

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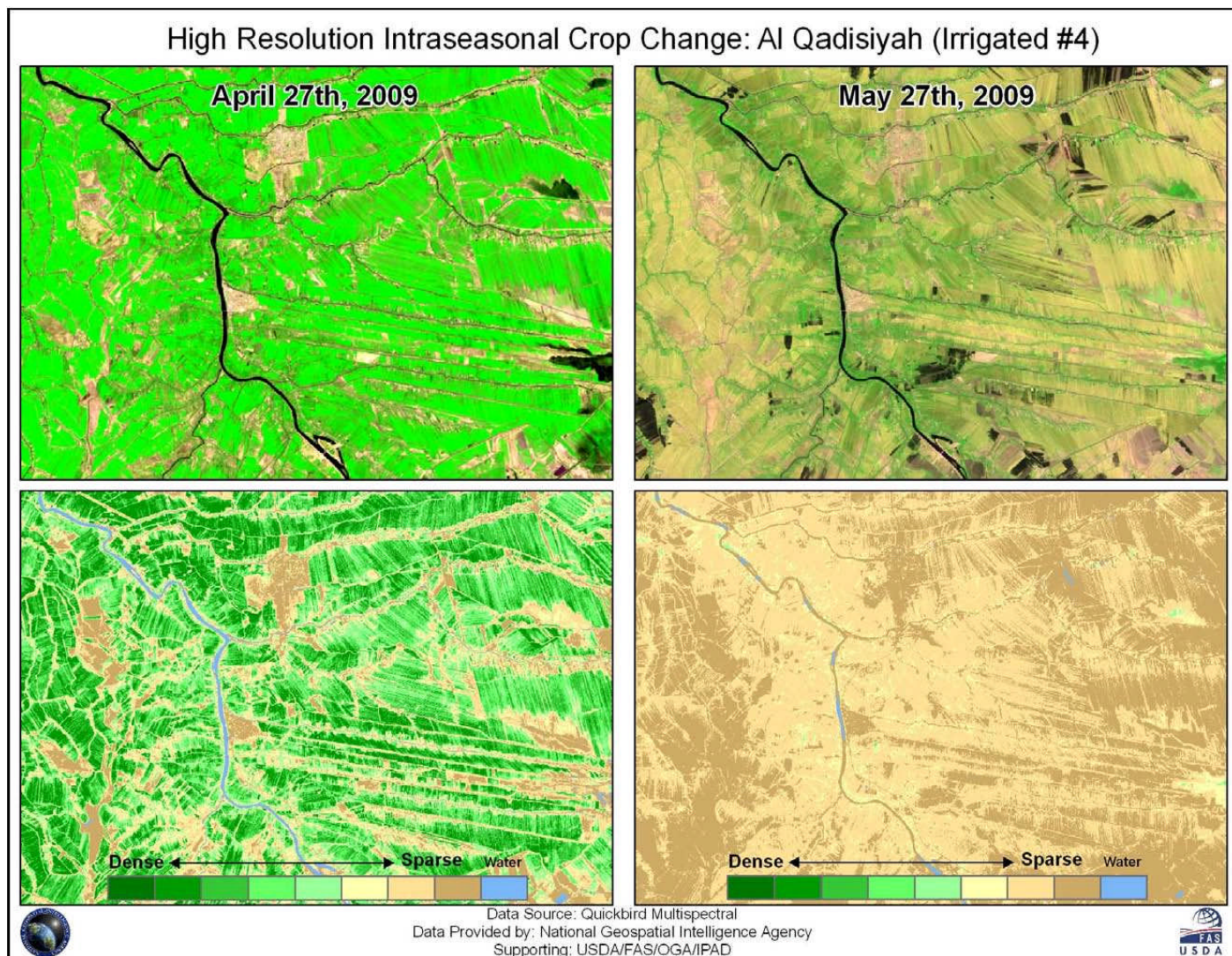


Figure 14: Quickbird imagery revealing crop maturation and harvest in Al Qadisiyah province.

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	IRAQ: Regional Wheat Statistics (Mha; MMT)										
								5-Year Average	Change from Last Year		
REGION	Province	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	5 Yr Avg	Actual	Percent	
NORTH	Arbil	Area	0.099	0.117	0.127	0.120	0.110	0.043	0.115	-0.067	-60.91%
		Yield	0.944	0.624	1.056	0.667	0.325	0.358	0.662	0.033	10.22%
		Prod	0.093	0.073	0.134	0.080	0.036	0.015	0.083	-0.020	-66.92%
	Sulaymaniyah	Area	0.070	0.153	0.120	0.120	0.055	0.095	0.104	0.040	72.73%
		Yield	0.357	0.244	0.272	0.250	0.125	0.260	0.251	0.135	107.25%
		Prod	0.025	0.037	0.033	0.030	0.007	0.025	0.026	0.018	267.97%
	Dahuk	Area	0.098	0.102	0.091	0.100	0.050	0.071	0.088	0.021	42.00%
		Yield	0.325	0.188	0.349	0.300	0.138	0.282	0.264	0.144	104.28%
		Prod	0.032	0.019	0.032	0.030	0.007	0.020	0.024	0.013	190.07%
	Ninawa	Area	0.613	0.551	0.489	0.464	0.024	0.079	0.428	0.056	236.17%
		Yield	0.872	0.687	1.024	0.691	0.681	0.687	0.774	0.006	0.90%
		Prod	0.535	0.378	0.501	0.320	0.016	0.054	0.350	0.038	239.21%
	At Ta'min	Area	0.160	0.195	0.141	0.205	0.120	0.100	0.164	-0.020	-16.46%
		Yield	1.478	1.758	1.704	1.408	1.393	1.279	1.504	-0.114	-8.22%
		Prod	0.237	0.343	0.241	0.289	0.167	0.128	0.255	-0.039	-23.32%
	Salah ad Din	Area	0.107	0.110	0.108	0.107	0.070	0.106	0.100	0.036	52.08%
		Yield	0.828	1.036	1.137	1.385	0.915	0.971	1.045	0.056	6.10%
		Prod	0.088	0.114	0.123	0.148	0.064	0.103	0.108	0.039	61.36%
SOUTH	Diyala	Area	0.087	0.109	0.113	0.106	0.085	0.068	0.100	-0.017	-19.91%
		Yield	1.527	2.031	2.277	2.194	1.757	1.678	1.911	-0.080	-4.54%
		Prod	0.134	0.220	0.258	0.233	0.149	0.114	0.199	-0.035	-23.54%
	Wasit	Area	0.148	0.166	0.157	0.164	0.159	0.150	0.159	-0.009	-5.60%
		Yield	1.903	2.467	1.833	1.900	1.289	1.291	1.781	0.002	0.12%
		Prod	0.282	0.411	0.288	0.312	0.205	0.194	0.300	-0.011	-5.49%
	Al Qadisiyah	Area	0.093	0.094	0.095	0.092	0.080	0.094	0.091	0.014	17.35%
		Yield	1.567	2.213	2.514	2.580	1.784	1.928	2.098	0.144	8.07%
		Prod	0.146	0.209	0.238	0.238	0.143	0.181	0.195	0.038	26.82%
	Babil	Area	0.049	0.068	0.068	0.065	0.070	0.069	0.064	-0.001	-1.99%
		Yield	1.042	1.379	1.362	1.529	1.459	1.461	1.372	0.002	0.15%
		Prod	0.051	0.093	0.093	0.100	0.103	0.101	0.088	-0.002	-1.84%
	An Najaf	Area	0.046	0.048	0.045	0.050	0.047	0.046	0.047	-0.001	-1.92%
		Yield	1.180	1.641	2.359	2.725	1.819	1.991	1.953	0.172	9.47%
		Prod	0.054	0.078	0.107	0.135	0.085	0.092	0.092	0.006	7.37%
	Baghdad	Area	0.043	0.060	0.059	0.048	0.062	0.055	0.055	-0.007	-10.71%
		Yield	1.462	1.617	1.598	1.667	1.563	1.589	1.583	0.026	1.66%
		Prod	0.063	0.097	0.095	0.081	0.096	0.087	0.086	-0.009	-9.24%
	Al Anbar	Area	0.043	0.035	0.056	0.057	0.043	0.052	0.047	0.009	20.93%
		Yield	1.220	1.098	1.380	1.408	1.335	1.342	1.297	0.007	0.53%
		Prod	0.053	0.038	0.077	0.080	0.057	0.070	0.061	0.012	21.57%
	Karbala	Area	0.006	0.007	0.004	0.002	0.002	0.005	0.004	0.003	127.27%
		Yield	1.037	0.927	1.258	1.976	1.773	1.772	1.457	-0.001	-0.04%
		Prod	0.006	0.007	0.005	0.005	0.004	0.009	0.005	0.005	127.18%
	Maysan	Area	0.077	0.088	0.087	0.094	0.082	0.050	0.086	-0.032	-39.25%
		Yield	1.270	1.681	1.438	1.308	0.807	0.822	1.221	0.015	1.86%
		Prod	0.098	0.148	0.125	0.124	0.066	0.041	0.112	-0.025	-38.12%
	Dhi Qar	Area	0.032	0.046	0.061	0.059	0.049	0.034	0.049	-0.015	-29.90%
		Yield	1.574	1.402	1.721	1.704	1.557	1.549	1.585	-0.008	-0.49%
		Prod	0.050	0.064	0.105	0.101	0.076	0.053	0.079	-0.023	-30.24%
	Al Muthanna	Area	0.018	0.012	0.012	0.011	0.009	0.010	0.013	0.001	12.36%
		Yield	1.076	1.081	1.225	1.255	0.798	1.012	1.074	0.214	26.86%
		Prod	0.020	0.013	0.015	0.014	0.007	0.010	0.014	0.003	42.54%
	Al Basrah	Area	0.016	0.014	0.017	0.017	0.017	0.016	0.016	-0.001	-5.33%
		Yield	0.959	1.026	0.956	1.328	0.988	1.111	1.061	0.123	12.43%
		Prod	0.015	0.014	0.016	0.022	0.017	0.018	0.017	0.001	6.44%
Total	Area	1.807	1.975	1.852	1.883	1.133	1.143	1.730	0.011	0.93%	
	Yield	1.097	1.194	1.342	1.244	1.152	1.150	1.206	-0.002	-0.17%	
	Prod	1.983	2.358	2.485	2.343	1.304	1.314	2.086	0.010	0.76%	
May 30th 2009											

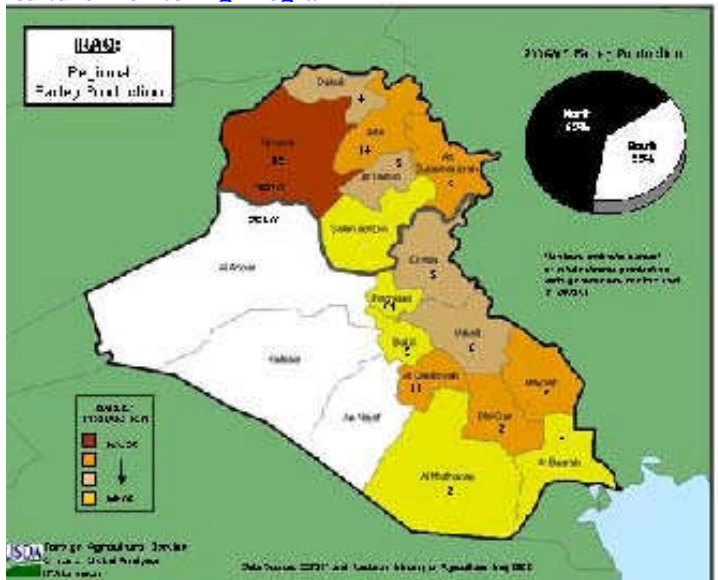
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	IRAQ: Regional Barley Statistics (Mha; MMT)										
								5-Year Average	Change from Last Year		
REGION	Province	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	5 Yr Avg	Actual	Percent	
NORTH	Arbil	Area	0.086	0.271	0.243	0.250	0.010	0.064	0.172	0.054	540.00%
		Yield	0.936	0.504	0.700	0.560	0.390	0.509	0.618	0.119	30.51%
		Prod	0.081	0.136	0.170	0.140	0.004	0.033	0.106	0.029	735.28%
	Sulaymaniyah	Area	0.052	0.125	0.108	0.110	0.040	0.080	0.087	0.040	100.00%
		Yield	1.376	0.964	0.964	0.727	0.348	0.894	0.876	0.547	157.27%
		Prod	0.072	0.120	0.104	0.080	0.014	0.072	0.078	0.058	414.53%
	Dahuk	Area	0.027	0.037	0.041	0.050	0.020	0.028	0.035	0.008	40.00%
		Yield	1.156	0.504	1.268	0.800	0.400	0.789	0.826	0.389	97.23%
		Prod	0.032	0.018	0.052	0.040	0.008	0.022	0.030	0.014	176.12%
	Ninawa	Area	0.529	0.614	0.595	0.615	0.001	0.087	0.471	0.086	14400.00%
		Yield	0.709	0.411	0.675	0.528	0.667	0.601	0.598	-0.066	-9.85%
		Prod	0.375	0.252	0.401	0.325	0.000	0.052	0.271	0.052	12971.75%
	At Ta'min	Area	0.010	0.023	0.029	0.030	0.012	0.013	0.021	0.001	10.17%
		Yield	0.865	1.022	1.119	1.000	1.339	0.939	1.069	-0.400	-29.87%
		Prod	0.009	0.024	0.032	0.030	0.016	0.012	0.022	-0.004	-22.74%
	Salah ad Din	Area	0.039	0.028	0.015	0.015	0.007	0.017	0.021	0.010	133.33%
		Yield	0.358	0.287	0.727	0.333	0.792	0.783	0.500	-0.009	-1.11%
		Prod	0.014	0.008	0.011	0.005	0.006	0.013	0.009	0.007	130.75%
SOUTH	Diyala	Area	0.038	0.037	0.035	0.035	0.027	0.023	0.034	-0.004	-13.21%
		Yield	0.731	1.163	1.149	1.143	0.883	0.779	1.014	-0.104	-11.78%
		Prod	0.028	0.043	0.041	0.040	0.023	0.018	0.035	-0.005	-23.43%
	Wasit	Area	0.055	0.069	0.063	0.060	0.069	0.060	0.063	-0.009	-13.42%
		Yield	1.045	1.014	1.026	1.083	0.810	0.717	0.996	-0.093	-11.47%
		Prod	0.058	0.070	0.065	0.065	0.056	0.043	0.063	-0.013	-23.35%
	Al Qadisiyah	Area	0.078	0.077	0.080	0.080	0.068	0.079	0.077	0.011	15.67%
		Yield	1.359	1.569	1.713	1.688	1.170	1.171	1.500	0.001	0.10%
		Prod	0.106	0.121	0.137	0.135	0.080	0.093	0.116	0.013	15.78%
	Babil	Area	0.021	0.020	0.024	0.025	0.024	0.024	0.023	0.000	1.69%
		Yield	0.765	0.909	0.875	0.800	0.839	0.842	0.838	0.003	0.37%
		Prod	0.016	0.018	0.021	0.020	0.020	0.020	0.019	0.000	2.07%
	An Najaf	Area	0.002	0.002	0.002	0.002	0.001	0.002	0.002	0.001	66.67%
		Yield	0.778	1.031	1.019	1.000	1.167	1.009	0.999	-0.158	-13.51%
		Prod	0.001	0.002	0.002	0.002	0.001	0.002	0.002	0.001	44.14%
	Baghdad	Area	0.005	0.008	0.006	0.005	0.026	0.010	0.010	-0.016	-61.69%
		Yield	1.056	1.090	0.940	1.000	1.192	0.921	1.056	-0.271	-22.71%
		Prod	0.005	0.008	0.006	0.005	0.031	0.009	0.011	-0.022	-70.39%
	Al Anbar	Area	0.003	0.002	0.003	0.003	0.003	0.003	0.003	0.000	-6.25%
		Yield	0.798	0.720	0.700	0.667	0.625	0.682	0.702	0.057	9.17%
		Prod	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.000	2.34%
	Karbala	Area	0.002	0.002	0.003	0.003	0.002	0.003	0.002	0.001	30.43%
		Yield	0.988	1.001	0.924	0.667	1.174	0.892	0.951	-0.282	-23.99%
		Prod	0.002	0.002	0.002	0.002	0.003	0.003	0.002	0.000	-0.86%
	Maysan	Area	0.066	0.071	0.065	0.065	0.076	0.040	0.069	-0.036	-47.58%
		Yield	0.826	1.288	1.249	1.231	0.579	0.588	1.035	0.009	1.52%
		Prod	0.055	0.091	0.081	0.080	0.044	0.024	0.070	-0.021	-46.78%
	Dhi Qar	Area	0.064	0.082	0.075	0.075	0.086	0.053	0.076	-0.033	-38.30%
		Yield	1.507	1.104	1.270	1.253	1.217	1.189	1.270	-0.028	-2.26%
		Prod	0.097	0.090	0.095	0.094	0.105	0.063	0.096	-0.041	-39.70%
	Al Muthanna	Area	0.038	0.023	0.027	0.025	0.023	0.021	0.027	-0.002	-7.49%
		Yield	0.806	0.784	0.714	0.800	0.564	0.683	0.734	0.119	21.11%
		Prod	0.030	0.018	0.019	0.020	0.013	0.014	0.020	0.002	12.04%
	Al Basrah	Area	0.006	0.005	0.006	0.005	0.004	0.005	0.005	0.001	25.00%
		Yield	1.029	0.877	0.891	1.000	1.250	0.913	1.009	-0.338	-27.00%
		Prod	0.006	0.004	0.005	0.005	0.005	0.005	0.005	0.000	-8.75%
	Total										
	Area	1.123	1.495	1.417	1.453	0.499	0.612	1.198	0.113	22.61%	
	Yield	0.881	0.689	0.878	0.750	0.863	0.815	0.812	-0.048	-5.51%	
	Prod	0.990	1.029	1.245	1.090	0.431	0.499	0.957	0.068	15.85%	
Mar 30th, 2009											

May 30th, 2009

APPENDIX



**FAS – Office of Global Analysis (OGA)
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International Operational Agriculture Monitoring Program**

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